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## **INDUSTRIAL LOYALTY**



# INDUSTRIAL LOYALTY

ITS VALUE, ITS CREATION, ITS PRESERVATION  
A DISCUSSION OF AN IMPORTANT AND HITHERTO  
NEGLECTED PROBLEM, SHOWING THE COSTLINESS OF  
THE PRESENT METHOD AND THE REMEDIES FOR IT

BY

BOYD FISHER

VICE-PRESIDENT THE EXECUTIVES' CLUB, DETROIT, MICHIGAN;  
CAPTAIN ORDNANCE RESERVE CORPS

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## AUTHOR'S INTRODUCTION TO THE ENGLISH EDITION

THIS booklet, which has been previously issued in America under the title *How to Reduce Labour Turnover*, and is now slightly altered for English readers, was written in January, 1917, for delivery before the Philadelphia Association for the Study of Employment Problems. It was not intended for publication or for repetition in any other place. It had to be delivered, however, in a number of cities and was printed in whole or in part twelve times during the year, both in Government, Association, and public periodicals. Its interest, I judge, lay in the facts that, on the one hand, it was the first statement of what purported to be a complete programme for stabilizing industrial employment, and, on the other hand, was concise enough to be read at a single sitting.

Since it was read, America has entered the war and many of the facts upon which its conclusions were based have been altered. The facts, however, are not different in kind but in degree. The exchanging of labourers, which, during the last three years, had made American business men keenly aware of the importance of a separate, functionalized labour department in a factory, was in large part due to the demands of war business. America's entry into the war merely accentuated the problems of handling men and the interest that business men took in them. The conclusions and proposals in this paper may be presumed not to be affected by the new conditions except as they have become more important.

The Russian revolution, with its repercussions even in America, has given additional point to proposals for improving relations between employers and employees. Business men in America are frankly apprehensive with regard to the attitude of labour after the war. They had

not gone so far before the war as British industrial leaders had gone in dealing collectively with workers. It may freely be said that, viewing American industry as a whole, the only accommodation that had been reached between the interests of capital and labour had been established through the operation of well-conducted employment departments. Aside from the collective agreement itself, which affects only three million out of thirty million workers, the well-conducted employment department was the only instrument of management upon which capital and labour seemed to be in accord.

Quite naturally, therefore, the problems and anxieties of the war have brought especial attention to the need of further developing this phase of management. It has already become evident that there is a marked shortage of competent employment managers, and the need of supplying them has appealed particularly to governmental departments supervising labour relations in war contract plants. The Ord-

nance Department has contractual relations with over two thousand factories, the Quartermaster Department supervises four thousand five hundred, and other departments deal with a further large number. Most of the labour difficulties that reach the industrial service sections of these departments could have been warded off or settled by employment departments, and the Government, therefore, is beginning to insist that plants under its supervision develop such departments. The Ordnance and Quartermaster Divisions, the Shipping Board, the Adjutant-General, and the Department of Labour have united on a joint programme of intensive training for employment managers in American universities. They are choosing to give these courses in schools located in industrial centres where theoretical instruction may be supplemented by practical study in well-conducted factories. The writer of this paper was loaned by the Ordnance Department to this group of agencies to develop the courses of instruc-

tion and supervise the arrangements in the universities. The first course is being given at the University of Rochester, and the second will be given in Boston, jointly by Harvard University, Massachusetts Institute of Technology, and Boston University, with the assistance of the Boston Employment Managers' Association. A number of other universities in other cities are scheduled for these intensive courses. Thus the scheme of labour betterment work herein set forth may be said to have secured the impetus of Government sanction.

A word of caution, however, should be given English readers relative to this programme for employment departments. They should not take it as a picture of actual conditions in any one plant. There are scarcely a dozen plants in the United States which even approximate the rounded development set forth. Each item of the programme exists somewhere, but not especially in Detroit, in spite of the fact that I drew most of my examples from

factories with which I was in a position to be familiar.

How to reduce the exchanging of labourers is a programme of idealism and it certainly cannot be less radical in America than it is in England. Arrant individualism is still in the saddle in this country, and men of social point of view are rare as general managers. The commercial adventurer who built up large businesses from small beginnings and exploited them for entirely selfish ends is indeed being displaced by the manager graduated from the engineering department. The engineering manager represents a transition. He is an improvement over the commercial profiteer, but is in most cases deficient in human qualities. He is no less a product than his predecessor of the prevailing system of capitalistic individualism. His training is not broad enough either in economics or in the cultural studies such as rhetoric, history, and the languages. His point of view is mainly mechanistic. He would calculate human results as he does machine capacities and

power deliveries, and is merely impatient of the uncertainties of human conduct. He would use force instead of psychology.

Management by engineers is, indeed, an improvement over management by mere commercial adventurers, bankers, and sales promoters, because the former are able greatly to increase production for the given outlay of energy, and wherever just relations may be expressed in a formula, as in a mathematical system of wage payment, are likely to insist upon such formula, but they are likely to be as inept as any other type of manager in dealing with workers' psychology and the workers' rights. Even the scientific management engineers who have made the management of labour their particular point of pride cannot be said greatly to have advanced the social problem in industry. The temporarily successful agitation of American labour unions for the abolition of the Taylor system in Government arsenals, the opposition of educators such as President Charles W. Eliot, and the conclusions

of the United States Industrial Commission as presented by Professor W. F. Hoxie, leave it no longer in doubt that scientific management, however beneficial to workmen as individuals, has been unable to settle the labour problem.

Most American social experts and industrial engineers consider the establishment of an employment department as a supplement to scientific management a sufficient concession to social needs in an industry, provided it be given authority over such matters as those described in this paper and provided it be put in charge of a man of high calibre, reporting directly to the general manager.

This insistence, however, upon large authority for the employment manager, often necessarily in conflict with the engineering and production phases of plant management, is rooted in distrust of the prevailing type of general manager. Whether he be a purely commercial or purely engineering type of executive, he has been found wanting in respect to his



dealings with workers. It is proposed now to supplement him by a second executive who is able to deal with men.

In spite of the fact that I seem to be an advocate of this plan, I do not conceive that it will work. No one who takes seriously the programme which I have set forth in this paper can imagine that it can be administered by any second executive. There can be no second man in matters of human import. Either the general manager himself must be, in effect, the employment manager, or the large employment scheme will not work.

Put the kind of employment manager required to administer this scheme into a plant under a general manager without a social point of view and one of two things must happen. Either the programme waits while the employment expert is saving the soul of the general manager and really fitting his superior to do the superior job, or the expert must quit, a failure.

A third alternative has sometimes appeared before the war, and it is the hope

of the new movement after the war. The employment manager can displace and become the general manager.

The best managed plants in America are those in which the chief executive meets the requirements of an employment manager and himself makes the problems affecting workers his chief care. Henry T. Noyes, of the Art in Buttons Company of Rochester; Henry S. Dennison, of the Dennison Manufacturing Company, South Framingham, Massachusetts; Harry F. Kendall, of the Plimpton Press, Norwood, Massachusetts; W. L. Shaw, of the McElwain Company, of Boston; Richard A. Feiss, of the Cloth Craft Shops of Cleveland; and Andrew Green, of the Solvay Process Company, of Detroit, are examples of managers of the type necessary to administer a real programme of labour betterment. D. C. Lowles, of the Cleveland Foundry Company, and W. A. Grieves, of the Jeffrey Manufacturing Company of Columbus, Ohio, are examples of employment managers who have become

general factory executives in the course of establishing departments on a sufficiently firm basis.

The men whom I have taken the liberty of mentioning all emerged before the war, and the demand for this type of executive is going to be much stronger as a result of the war. We have learned how costly it is to society to permit the world's business to be managed by those who exploit the worker. Now that the worker himself is awakening to new consciousness of power, it is going to be increasingly costly to the owners of industry to entrust administration to those who arouse the antagonism of workers. I foresee that after the war organized workers, united with organized society, through politics, are going to render it impossible for any but the social-minded employer to remain at the head of industry. From this point of view, some such programme as the one here presented will become not alone the outline for an employment department's work, but the major item in the programme of industry.

The commercial profiteer and the mechanical engineer, as such, will both be retired as business administrators, and the social engineer will emerge. It seems probable that this will be our industrial democracy which we have all been vaguely talking about, that the workers, through society, will compel the selection of executives of the social point of view.

## INDUSTRIAL LOYALTY

No one knows how much it costs on the average to break in new men. The most conservative estimate of any authority is forty dollars per man (£8), but this, as well as every other calculation, is, after all, only an estimate. - No one has yet used an exact cost system for recording the waste of unnecessary hiring and firing. My own proposal of a method for computing this cost has been published in the May, 1917, issue of the *Annals of the American Academy of Political and Social Sciences*. As yet I have not heard of anyone putting it into effect, although several plants have undertaken to do so as soon as conditions warrant.

Aside from the rather careful estimates made by W. A. Gries, of the Jeffrey Manufacturing Company, and Magnus Alexander, of the General Electric Company, we have only occasional flashes of

evidence as to the great cost of labour turnover.

One of the most startling proofs which has come to my attention may be gleaned from the report of a meeting of the production-methods group of the Executives' Club on September 20, 1916.

Mr. J. T. B. Rheinfeldt, head of the manufacturing standards department of the Packard Motor Car Company, had explained the methods by which his department had rated the expected capacity of every machine and production centre in that great plant. He gave out the information that the ideal capacity was 25 per cent. higher than the expected capacity—that is, his company has 25 per cent. more equipment than would be necessary to turn out the work, if it were not necessary to allow for delays, breakdowns, and low-speed production. Then followed this significant colloquy, as reported in the minutes :

“ Mr. Fisher asked how much of the 25 per cent. was due to the exchanging of labourers—that is, if there were no absence

to be contended with, how much this 25 per cent. could be reduced.

“ Mr. Rheinfeldt said that if the labour exchanging were zero, the factor could be eliminated entirely, as the allowance on the time study (i.e. the calculated standard operation time) would care for the repairs, breakage of tools and machines, etc.”

Think of this for a moment. The physical equipment of the Packard Motor Car Company is worth, in round figures, \$9,000,000. If the exchanging of labour were reduced to zero, this huge investment could, in Mr. Rheinfeldt's opinion, be reduced by \$1,800,000. The interest at 6 per cent. on this amount of money is \$108,000 per annum.

Nor is this all. Is it not fair to assume that labour cost would also be reduced 25 per cent. if there were no exchanging? If so, out of 12,000 employees, the wages of 2,400 men and supervisors, anything from a million and a half to two and a half million dollars a year, could be wiped out.

Now a word about the reliability of the

above figures. They are, admittedly, not exact. In the first place, Mr. Rheinfeldt may have been in error in estimating his ideal capacity. He may have overstated the case, too, when he gave it as his opinion that a complete elimination of exchanging would eliminate the necessity of providing the 25 per cent. extra plant capacity. Furthermore, I have avoided giving exact figures on equipment investment and on the wages of one-fifth of 12,000 employees, because, in view of the uncertainty of some of the factors, the reader would discount exact figures too much.

But I do wish to enforce this point. The Packard employment department is one of the oldest and best conducted in Detroit. It has already effected great savings in cost of exchanges. Yet the head of the standards department, the man who, with his assistants, sets all standard working times in the plant, estimates that new and inexperienced workmen reduce the speed of production so much that a 25 per cent. extra provision of equipment, buildings,



direct labour, and supervision must be made.

Adapt that case to your situation. Figure what it would mean to your company annually to add 25 per cent. to your costs and ask yourself if you are paying so much to break in new men.

Do you know that you are not? We have no true figures for cost of exchanges as yet. Until we get them we must rest our case upon such indirect evidences as Mr. Rheinfeldt's startling estimate.

We might also gather other evidences of the cost of breaking in new men by studying operation costs in plants which have kept a steady force, or, in plants which have reduced exchanging by comparing production records per man at the beginning and at the end of the periods during which the reduction of labour exchanging took place. This, however, would not be a very reliable guide, because a good part of the increased production might have come from the introduction of more scientific methods. It is significant,

however, that every plant in Detroit that reduced its exchanging of labourers in the year before our entry into the war increased its output per man. In some cases output doubled.

It is not necessary, in fact, to prove in a general way that losing men is costly. There is a common agreement upon that point, and there is also a pretty general agreement upon the possibility of ascribing to success in creating a stable force some of the increase in production which appears concurrently. Employment managers, I take it, desire not so much to be persuaded that it is worth while to discover methods of reducing the needless exchange of employees as to have proof that they can keep men on the job by definite methods which have succeeded in other plants.

I have collected some very interesting figures on the reduction of labour exchanges in Detroit plants during the last year previous to our entry into the war. Labour conditions during this time were very disheartening, and, in all firms where em-

ployment departments had been established for a long time, the exchange of employees, in spite of intelligent work, increased during the year. This is a very interesting fact when taken in conjunction with another distinct and contrasting fact ; namely, that, in all plants that had installed employment departments within the year, the exchanging of labour had generally declined during this bad year.

Take the Saxon Motor Car Company, for instance. Its employment department had been in full running order only a little over a year, and in the first year of its operation it hired 140 fewer men for each hundred on the pay roll.

Take, again, the Hayes Manufacturing Company, where the employment department was established in April, 1915. In the first year of operation exchanging was cut practically in two. And then in the next four months, from April to August, it was more than cut in two again, and has been declining slightly ever since. This reduction was accompanied

by a 30 per cent. increase in output per man. Then there is the Timken-Detroit Axle Company, where the labour department had been in operation for sixteen months, and where foremen are given a bonus for what is known as "force maintenance efficiency." During these sixteen months this efficiency increased 20 per cent. I refrain from giving the figures upon which this percentage is based because the Timken desires not to reveal the exact exchange data.

One of the most remarkable records I know of, with regard to reduction of exchanges as the result of the installation of a complete labour department, is that of the Solvay Company, of Detroit. The record is so good that I am going to take the risk of quoting the exact figures recorded. The Semet-Solvay (Coke) Company and the Solvay Process Company occupy adjoining factories on the same plot of land, but maintain entirely separate managements. Up to the 1st of June, 1916, the Semet-Solvay Company had an employment

department, and the Solvay Process Company, on the other hand, permitted each foreman to hire his own men.

When it came to the attention of the management of the Solvay Process Company that they were having labour difficulties which did not appear in the Semet-Solvay, the employment manager in the Semet-Solvay was given entire authority over engaging and discharging workmen in both plants. The average exchanging for the two plants during the month of May was 10 per cent. In the month of June, after the employment department had taken over the work of the Solvay Company also, the exchanges of the two plants dropped to 8.3 per cent. In July, it was 8 per cent ; in August, 4.1 per cent. ; in September, 3.3 per cent. ; in October, 3 per cent. ; in November, 2.6 per cent. ; in December, 2.4 per cent. This is the most remarkable record of employment department efficiency that I know of anywhere, and when you take into consideration the fact that the average exchanging of

labour in Detroit was jumping up by leaps and bounds at the same time that the Solvay companies were greatly reducing their exchanges, it appears even more surprising.

I was able to analyse the exchange figures for the year 1916 in 57 Detroit plants, and found that they averaged a little over 252 per cent. per plant. This was, of course, very high, because labour conditions had been unprecedentedly bad. The figures, however, are not so high as they would have been if they did not include the comparatively low averages of plants having employment departments, as well as of plants which allowed foremen to do their own "hiring and firing." An analysis of plants having labour departments against those having no labour department shows that, roughly averaged, the plants having no employment department hired three men to every two hired by those which did have employment departments.

I do not attempt to give more exact figures because I am somewhat sceptical as

to the correctness of many of the reports which came to me, particularly from plants that had no separate employment departments. I suspect that if we had entirely reliable figures from all plants, the record of those having no employment departments would appear even worse in comparison than they do.

It would be enlightening to take each individual case of labour exchanging reduction and trace out the methods by which it was accomplished. During my three years as adviser to thirty-five of the principal Detroit factories I was able to do this with some accuracy. In a fairly short presentation, however, it is preferable to outline a complete scheme for labour exchanging reduction based upon the combined experiences of a number of plants having employment departments. In this paper, therefore, I have tried to outline what appears to be a combination of all the approved remedies for what is sometimes known as the "mobility of labour." Obviously not all parts of the complete scheme

can be applied to every plant. And good authorities may feel that some of the methods outlined have no business to be in the scheme at all for any plant.

Permit me at the start a doubtful generalization. The manager of a Detroit plant which had brought itself into nearly complete conformity with the principles of scientific management and which was used as a model for study by all other Detroit plants, left to take over the management of an automobile company in another city. He found the new plant devoid of any semblance of scientific management, and yet for a whole year he did nothing to change its internal methods. He found upon analysis that 80 per cent. of the cost of his car came in the purchase of parts made in other plants. Therefore, in order to reduce the cost of his product he found that he would have to devote most of his efforts to reducing the cost of the parts made outside. So it is, I think, with labour exchanging. I believe that we may safely say that 80 per cent. of the cost of exchang-



ing of labour is due to causes that lie outside of direct plant activities ; that is, when the workman is off duty.

Now the remarkable thing that was developing in employment work in Detroit even before the war focused especial attention upon labour problems was a disposition to tackle the whole job of reformation. Like the automobile manufacturers just referred to, our employers are striving to reduce the 80 per cent. item of cost of inefficient labour where the expense is incurred ; that is, outside of their own plants. They recognize that exchanging of labour is a special phase of the problem of inefficient labour, and that the reduction is only the first step in a process of education and of economic pressure to elevate the standards of workmen. They aim not only to keep workmen, but to develop them. And they are prepared to go as far as the workmen's own home life, even, to solve their problem.

Much of the impetus to this thoroughgoing effort comes from Henry Ford.

Employers sometimes feel that they have much to forgive in him, but most of his fault lies in being first to do so many things. One of these is the extension of factory influence into the whole life of the workmen. All Detroit plants are beginning to follow him in this, and I honestly believe that they are profiting by his experience, and are taking the best and leaving the worst of his plan. Denied the credit of initiating the plan and free from the fear of precipitating any such startled inquiries as have beset Mr. Ford, they are able to proceed slowly, quietly, and cautiously. The results so far have been good.

Miss Ida M. Tarbell came to Detroit prepared to revolt at un-American interference with the private concerns of workers as evidenced by the Ford procedure, and went away convinced in its favour. She said of the Ford scheme to the Executives' Club, "I don't care what you call it—philanthropy, paternalism, autocracy—the results which are being obtained are worth all you can set against them, and the

errors in the plan will provoke their own remedies."

So you will find in my scheme of labour exchanging reduction a concrete statement—a bill of particulars, so to speak—of the philosophy of the more progressive Detroit employers. Exchanging breeds inefficiency. Inefficiency breeds exchanging, and the only way to break the vicious circle is to attack them, both at one time, and, for the most part, outside of direct factory activities.

The employment department in this view becomes the vestibule not alone to the factory, but to a better life. The employment supervisor becomes a co-partner with the teacher, the minister, the social worker, in the business of reforming men. It was not Billy Sunday, the evangelist, it was the employers of Michigan that put the State in the prohibition column. They wanted to remove the saloon on the route between the home and the factory. For the sake of securing more efficient workmen, our employers and their personal representatives—the employment managers

—are fighting for the elimination of vice and gambling through Mr. James Couzens, formerly vice-president of the Ford Company, and now police commissioner. They are fighting for better schools through Mr. Mumford, of the Edison and now president of the School Board, and for better city government, more adequate housing, and better street-car facilities, through the disinterested public services of many busy manufacturers.

Nor do our social-reforming employment managers confine themselves to drag-net measures of improvement. The scheme I have assembled is a routine of particular measures involving the doctrines of “from each manufacturer, according to his ability,” and “unto each workman, according to his need.” Nearly every measure outlined is actually in effect in some Detroit plant, and all of them, based upon experience somewhere, are at least in project.

Let us take up remedies for labour exchanging and inefficiency under four main headings—preliminary, fundamental, sup-

plemental, and provocative remedies—and speak first of the provocative remedies. A detailed outline of the scheme is given at the close of this paper. It contains some suggestions not elaborated in the text.

I believe in “ firing ” men as a final means of keeping men. We are in danger of becoming too sentimental about exchanging. We are too likely to regard every man lost as an unwholesome sign. There is a legitimate place yet for the “ tin can,” and when it is tied to man or beast it ought to have something in it to make it rattle. But the condemnation that reverberates most noisily is the deliberate unfavourable judgment of one’s peers. I believe that every discharge should be approved by a committee on which workmen are represented. This is my notion as yet, but Dodge Bros. go as far as providing a “ blue envelope ” committee of executives and no arbitrary individual judgment can effect a discharge. Deliberation and cautious fairness in getting into action, however, only advertise the final result. When a

man goes out of that plant, he is not summarily kicked out, it is true, but it seems much more impressive to be shoved out slowly by a consensus of opinion.

Let us by all means have the trump card of discharge in our hand and then strive to win by playing "off suit." If it is clearly understood by workmen that the patience of the management is the forbearance of strength and self-control, all our other methods of reducing exchanges will gain in effectiveness.

Returning to the proper order in the outline, strictly speaking, what I have classed as preliminary measures, namely, a cost system and a recording system for exchanges, do nothing in themselves to retain a permanent working force. But without them the effective measures are not likely to be applied.

A true cost system is an urgent necessity. If it is true, as Mr. Magnus Alexander estimates, that it costs \$73.50 to break in a new semi-skilled operative and only \$8.50 to take on a new labourer, mere percentage

figures for exchanges mean very little. I shall not itemize the details of cost here, but I submit that we should know how much each type of new worker costs in terms of diminished production resulting, and of the excess equipment investment needed, increased scrap incurred, and increased supervision and education required. Managers may affect to believe that it costs \$400,000 a year to hire 10,000 men, but they will not spend even \$50,000 to save that sum until you prove incontrovertibly the actual expense of putting on new men. The thorough-going remedies for exchanges are so expensive that until even the most sceptical managers are convinced we shall not get far with our corrective measures.

As for a complete recording system, little preachment is necessary. The aim should be twofold. The records should reveal graphically not only the extent but the causes of exchanges, and they should reveal the parallelism between high exchanges and low efficiency. The basis, of course, is an individual register for each man, so com-

plete that all other reports can be drawn directly from this. Aside from the usual historical facts, showing dates of employing or transferring, the starting rates and changes of rates and date of leaving employ, on one card filed in envelopes or folders together with original application and physical examination forms; this individual record should be a chronicle of the workman's progress, on such items as earnings and bonuses, defective work, absences and tardiness, his complaints and those charged against him, a periodic certification by foremen, and, when he leaves, his apparent or declared reasons for going. The efficiency record may in some cases be kept on the same card with the general historical record.

The exchanges should be analysed at least monthly, and the record should show :  
(a) by weeks, months, and years how long quitters have been in the employ, in order to reveal the critical periods when men are most lightly attached to their jobs ;  
(b) by departments, to show what foremen



or classes of work are most at fault ; and (c) by reasons assigned, to show what conditions call for improvement. It should show, also (d) what operations furnish the greatest mobility, so that, if a cost of new employees has been established for each operation, the monthly losses from exchanges can be exactly computed.

Fundamental remedies for exchanges differ from what I call supplemental only in relative importance. If you hire men wisely, provide them with steady work at an adequate wage, and refrain from hasty discharges, your exchanges will be comparatively low. These are the measures of fundamental importance.

The supplemental remedies are refinements designed rather to promote efficiency in the men you keep, than to furnish additional means of keeping them, and are likely, thus, to exercise an indirect influence in reducing exchanges.

It is almost begging the question to say, hire the right men for the jobs, because, obviously, the right man is the man whom

you will like and who will like you. But the adaptation of men to jobs can be only relatively perfect and for this reason many managers make no serious attempt at it. There is room for so much development here that I know of almost no other remedy that will reach so far. When foremen hire, they usually engage the first man who shows up, and discharge him when he does not make good. And a good many employment managers do almost the same thing. In part, this is due to the fact that they have not the resources to write up exact specifications for all the jobs for which they employ ; still more because thoroughly satisfactory tests of ability and character are yet to be devised. But, still more, it is due to enforced haste in filling requisitions. Foremen, planning department men, and managers do not give the employment department enough notice of men needed. A list of men required for the year's predicted production should be just as much a part of the engineering department's specifications as the blue prints and the

routing. It is certainly as easy to predict the number of men required as to predict cost, for without the labour figures how can the cost be estimated? And, yet, how many employment departments know, two days ahead, even, the men they will be called upon to hire? Managers should inform their employment departments as far ahead of the need of new men as they inform their purchasing agents to supply material.

With this advance information the employment manager can build up the right kind of application list. If your files list only men that have applied voluntarily, they will be as unsatisfactory as a list of sales prospects that you might secure without travellers or advertising.

The best application file is really a prospect file, built up as the result of a census of the workers suited to your plant, in your whole city, and particularly your vicinity. The Cole Motor Company for this purpose made an inclusive industrial census of the city of Indianapolis. The Saxon Motor

Company of Detroit advised me that the simple measure that did most to produce its remarkable exchanging reductions was the practice of preferring men who lived within walking distance of the plant.

With a knowledge of men to be hired, the employment manager can also prepare specifications and forms of examination which will do much to eliminate men who would not make good if hired.

Physical examinations are, of course, a necessity in a good system, and they should be tied up with the measures for improving men once on the pay roll, by getting the examiner to indicate deficiencies to be corrected. But even examinations, and such other precautions as visits to the homes of desired applicants, and a checking up of previous records of employment can be resorted to only if ample time for inquiry is secured.

It is not apposite here to deal with the question of industrial education, but it should not be overlooked that one does not always need to go outside his own plant to

put on a new man. In filling a position it is always cheaper to transfer from a less important position an employee who has been in training for a promotion. A work force can be more certainly toned up by educating apprentices and giving a continuing and broadening education to operatives than by hiring brand-new men by any system of careful selection whatever. The growing demands of industry far outrun the supply of skilled workers, and not only to contribute its share of trained people, but even to obtain its share, a plant must co-operate in the general educational programme.

One of the fundamental remedies for exchanges is the payment of an adequate wage, and this can be urged only upon plants that have taken pains before hiring to ascertain whether the applicant's home life and standards of living, as well as his mental and physical fitness, promise his being able to earn an adequate wage.

By an adequate, I do not mean merely a minimum wage. I mean a good fat wage

—one that will clothe, nourish, and educate his children as well as feed him up properly. The Visiting Housekeepers' Association of Detroit estimates that the lowest possible minimum income for a family of five is \$89 per month in peace times, and no family in Detroit is wise enough to know how to spend that sum well. When the data for this paper was collected, just before our entry into the war, eleven plants in the Executives' Club had undertaken deliberately to see that every workman, taking each case individually, by investigation, was sufficiently supported. Some of them discovered that for special reasons some families cannot live on \$100 per month. Any number of plants, such as the Packard, Cadillac, Solvay, and Hudson, make not only general studies of cost of living, but particular inquiries, and where necessary pay off at good discounts the debts of overburdened workers, allowing them to return payment periodically. The shortage of labour resulting from the disarrangements of the war has resulted in our

manufacturers generally giving up the old supply and demand theory of compensating labour. They now advance wages to meet rising costs of living because they must. The adoption of the more enlightened principle, however, by so many employers before the war has done much, I believe, to diminish labour troubles as an accompaniment of the war.

In my outline I have indicated a number of ways in which modern factory management follows up the pay envelope by helping the worker to purchase wisely, and to escape those who prey upon the indigent and improvident by various forms of usury—the “loan shark,” the instalment payment furniture house, and the unethical medical practitioner. Many mutual aid associations and several legal aid bureaux have already been established in Detroit, and many plants encourage thrift and assist in home building. We not only have seven or eight co-operative stores in process of establishment, but six of them are considering plans to pur-

chase jointly through the Executives' Club.

In connection with the remedy of steady work, it is just as important to keep piece-workers continuously supplied with work, so that they can earn their expected income, as it is to regularize work from season to season so as to keep a level force. In fact, it is sometimes kinder to men to lay them off outright than to try to keep them while they are earning partial wages. Employment managers cannot do much to regularize production from season to season and from day to day, because these things are largely matters of administrative policy and of factory system, but if they recognize and advertise the importance of these things, they will focus the attention of their superiors upon the necessary remedies.

When I say, finally, under the head of fundamental remedies, do not "fire" hastily, I mean to urge not only that you curb ill-tempered foremen and curb your own impatience, but especially that you



give yourself time to influence men through the more slowly acting measures headed up in this outline under "Supplemental remedies." It would be of very little avail, either as a means of re-selecting or of disciplining men who had failed in one job, to transfer them from department to department, as the Ford Motor Company, for instance, does with so much patience, unless every day counted to give a man not only new hope but new instruction. Thus you will find the opportunity to adopt the programme sketched out here in the form of injunctions to start your new men right, promote physical efficiency, foster good habits, make your work an unfolding career and a sufficient future, and all the time encourage self-expression, not only of complaints but of suggestions and of co-operative interest and activity.

To start new men right means not alone to give them a pleasant and encouraging impression of their new work, but also to complete the job of hiring them. A man is not really engaged for a job until he is

engaged in it, and too often plants throw needless difficulties into a man's path between the time they agree to hire him and the time when he settles down to work. An agreement to employ, in the first place, is not completed until the new man is given a definite guarantee of his starting rate of pay. You cannot be sure of a man's doing anything but spoiling work for a day and wasting your time if you take him on first and then let the foreman settle his rate of pay afterwards.

Give your man a definite starting wage, and, so far as possible, a reasonable assurance of the rates to which he will be advanced at stated times if he makes certain standards of efficiency. Then if he accepts your job, you can be more sure of him.

But it is just as important to help a man to get over his stage fright in tackling a new job. Most men suffer acutely in contact with strange surroundings. Even experienced workers discover unexpected obstacles in new machines, and most new

men will be found somewhat to have exaggerated their good qualities in order to be taken on. You, of course, have discounted their statements, but they go to work uneasy in the thought that they have "put something over" on you and are afraid of being found out. Add to this their awkwardness with fellow workmen and foremen, both strange to them, and their lack of acquaintance with the plant, and you get a frame of mind which makes their work of little value to you, and the job seems undesirable to them.

One of the things which stood out in my mind after reviewing the many excellent methods of the Art in Buttons Company of Rochester was the considerate way this company has of introducing new employees. New people are asked to come at an appointed time later than the hour when work starts, and are introduced by a representative of the employment department to their fellow workers and made acquainted with the rules, the conveniences, and the special attractions of the plant.

A fellow worker is commissioned to take them to luncheon the first day, and special queries are answered.

It is important to follow this method of introduction up and to get instructors to keep an eye on the new workers till they bring their efficiency up to normal.

It may be, and usually is, necessary to help a worker out with money or meal tickets, or to guarantee his board till the first full pay day. All the workmen I have known individually have gone to new jobs "dead broke." Often they leave on some pretext, after working a few days, in order to draw pay to keep from going hungry. The Studebaker Corporation in Detroit is especially liberal with respect to meal tickets or pay advances to tide the new workman over. Much injustice is done new workers in keeping them on day rates after they have become proficient enough to be put on piecework. While I have not analysed from this point of view the high exchange of labour which, I know, comes chiefly in the first few weeks of em-

ployment, I suggest that a comparison would show that exchanges are highest at just the time when new workers should be put on piecework and are not. I have followed the cases of workers for whom I secured jobs, and know that many cite this as a reason for quitting. Two plants I know of make special rates to beginners higher than the piece rates of experienced employees so that they can measure their progress from day to day and more speedily get on a profitable wage. This is a kind of minimum-wage guarantee with the added value of an efficiency scale. The Joseph and Feiss Company, of Cleveland, is among the many enlightened managements which guarantee beginners a living wage while learning by paying a piece rate higher than regular operatives are paid.

Assuming our workmen well hired and well started, the promotion of physical efficiency is a direct means of increasing production and of helping men to earn pay which will keep them on the job. There are so many things entering into this that

it is a good thing, when the resources of the company warrant, to have a physical department as a branch of the employment division, with a high-grade physician and several nurses in charge. There is not space in this paper to mention any of the many plants which do this. The American Medical Association now has a separately organized section of physicians in industrial practice, and there is also a national conference board on the subject.

The physical department will generally conduct examinations of desired applicants for employment, but I prefer the more economical method of the Flint (Mich.) Manufacturers' Association, of a central physical examination bureau for applicants. The general adoption of this plan would free the time of plant physicians—who would be still needed, to conduct periodic examinations of all workers, as a basis for advice on better health. Such periodic examinations may be voluntary at the start, and perhaps 70 per cent. of the employees will come forward. Later, say

after the second or third time, the examination can be made compulsory. It will reveal surprisingly the causes of low production in many cases, and help to eradicate them. It will also assist the employment department in securing reduction of labour exchanges by proper assignment to jobs, because it will reveal what physical requirements attach to the different types of work. The physical department should supervise plant conditions from the point of view of health, and should have authority on the improvement of ventilation, heating, and lighting, and the reduction of noise, dirt, and noxious and unpleasant odours, as well as the sanitation of oils and waste, the purification of drinking water, and the cleanliness of all public rooms.

The Joseph and Feiss Company in Cleveland and the Art in Buttons Company in Rochester are among the plants which find it profitable to add a dentist and an oculist on part time to care for the teeth and eyes of employees. Most workmen have bad teeth, with resulting indigestion

and other degenerative diseases, and defective eyesight can injure workmen and slow up work before they lead to the danger of accidents.

The physical department, of course, has charge of the emergency hospital, and in this connection it is worth while to say that first aid should be prompt, adequate, and accessible, as it too frequently is not.

But much work should be done away from the plant. Physician and nurses should visit workmen kept at home by sickness, their families' as well as their own, so that they will not be allowed to neglect illness. Home visits help to reduce absenteeism, but they are justified on their own account in promoting physical efficiency. Plant doctors making home visits will know how to avoid conflict with other physicians with whose work they may seem to interfere.

There are other measures which do not come within the field of a physical department, which are advisable, nevertheless, on the score of increasing a workman's physical efficiency. Such expedients are



plant restaurants, shorter work hours, plant athletics, rest periods during the day, and yearly vacations with pay.

If possible, a factory should arrange to maintain its own restaurant, which, if properly managed, can be self-supporting. It diminishes a workman's energy to eat, possibly at his machine, a cold lunch carried in a paper parcel from home.

Shorter work hours, while diminishing output for the day, increases it for the period. On principle, I favour the eight-hour day, or, at most, the 50-hour week, and in some arduous or intensely monotonous tasks I favour an even shorter day.

An investigation which I made in 1916 among plants having the short work-day convinced me that where a worker is not limited in output by the nature of the process, he will do as much in 48 hours as in 60. Of course, to secure this result the plant must be organized to keep him continuously busy for eight hours, and an incentive wage payment system must induce full effort.

My prejudice in favour of the eight-hour day springs wholly from my belief that it is an economy for the well-organized factory and a gain for the community. Where issues with unions arise over the matter or where consideration for the interests of other manufacturers enters the question it may be advisable for a limited time to maintain longer hours on principle. There is always something to be said for the *status quo*, and where hours are to be shortened, the employer has a right to demand time for adjustment so as either to secure some increase in effort from the workmen or to pass on to the consumer the added expense assumed for community good.

Furthermore, I believe that for securing increase in physical efficiency it is preferable to distribute a part of the added leisure time through the workday in the form of rest periods. The Aluminium Castings Company of Detroit gives a five-minute rest period each half-day. A company in Rochester allows one rest period

of three to twelve minutes in every hour, according to the nature of the work. To secure conformity it shuts down the power and has recreation organized to utilize the time. The experience of the army with regard to forced marches and the experiments made by Frederick W. Taylor long ago demonstrated measurable benefits from rest periods, and the recent studies of Mr. Florence of the British Association, and of Professor Kent for the British Munitions Ministry, have given us data which American manufacturers are beginning to take into account. Any manager may make a first test by observing the effect of rest periods in his stenographic department. A working principle is that the more repetitive the operation is, and the shorter the cycle of operation time, the more frequent but the briefer should be the rest period. And, too, I should consider it advisable to make rest periods either longer or more frequent toward the close of the day.

A vacation is one kind of rest period in

the above sense. Shop men need it perhaps more than office workers, and should secure it on the same terms. It is advisable to tie the vacation plan up with the measures to reduce absenteeism by making the length of the vacation with pay vary with the number of weeks of satisfactory attendance. Strike fever is often vacation fever. Shrewd managers, if they had no more altruistic aim, might well plan vacations to promote industrial equanimity.

It is needless to elaborate on the benefits of athletics in relation to health. They are, if anything, more important as self-expression, which I shall mention later.

A separate supplemental remedy for exchanges is the development of good work habits. This relates particularly to punctuality and regularity. The man who is on time every day is least likely to quit work. His mental attitude becomes fixed in a feeling of responsibility toward his work. But the worker who becomes casual with regard to attendance has taken the first step toward total delinquency. You have

only to picture the subconscious processes of a man who remains away from work one day needlessly to appreciate the subtle change of attitude he bears toward his job. To foster good habits, we enumerate such measures as prompt investigation of causes of unexcused absence, strict penalties for tardiness, bonus for regular attendance (one Detroit company, for instance, paying 25 cents a day extra for a month's perfect record), and the establishment of a pay system such as piecework, premium, or bonus, which encourages and rewards accuracy, high output, and punctuality.

All other remedies for exchanges are likely to be chiefly negative or counteractive unless the management encourages self-expression. Self-expression is self-rewarding. No life is complete without it, and the factory which does not promote it is repressing a vital part of the complete life. First, hear complaints. No matter how unwisely or unfairly objections are presented, give men every chance to "knock." Let them come individually by preference.

But even if you deprecate grievance committees, never refuse to hear a committee once appointed. Some men satisfy complaints by being allowed to air them, just as some old people desire not so much to be cured of ailments as to have ailments to describe.

It is better, however, to pick up complaints before they become grievances—while they may be still an expression of some form of idealism—and to deal with disquieting aspirations before they become programmes. For this purpose shop meetings called by managers, and scheduled to discuss pleasant and hopeful enterprises as well as difficulties, preserve good feeling. Like wise Parliamentary leaders who head off taking a vote until the majority will fall their way, or who sense out a needed compromise or recession before it is exacted, a good manager can employ a shop meeting either to approve his suggestions or to applaud his discernment. Detroit employers would never agree with me before the war as to the desirability of workmen's

shop meetings such as factories in other cities had promoted or permitted, but the attitude is changing. A recent movement to promote discussions of economics and politics in shop meetings has recently found surprising favour among manufacturers.

But self-expression goes beyond mere participation in meetings. It may be interest in work evoked by a suggestion system. If you make it an invariable practice to acknowledge in writing every proposal in writing, you have a suggestion system. Boxes to receive letters, and prizes, commendation, and promotions to reward them, are mere refinements. Then there is the still more exuberant and satisfying form of self-expression which appears in social, athletic, and co-operative organization. We are all nearly as ambitious for communal as for financial rewards. You cannot bring 500 people together in a factory or anywhere else habitually without providing a field for social striving. They crave organization, fun, activity, and influence upon one another. You, as

managers, can capitalize this tendency to the advantage of your enterprise. You can make your organization a real family, your plant a communal home.

Now, when we reduce exchanges of labour we assume certain responsibilities. Building up a permanent working force means securing permanent employees, men and women who stay with us till they grow old, and retire or die. We must, therefore, make their work more completely satisfying. We must make their work a sufficient career. Self-expression is one part of it, and there are other elements in it.

I know of few plants where routine factory work is a sufficient career, but I see no reason why it should not be. Doctors look forward cheerfully to going on being doctors. Lawyers have no difficulty in finding their life work in the law. Other professions are satisfying to those who follow them, and yet such is the nature of factory work at present that it savours a bit of the desire to perpetuate class distinctions to suggest that factory workers



should content themselves with the prospects of continuing as factory workers. Some agitator has suggested that employers appropriate the motto of a big New York dairyman, "Milk from contented cows," as suitable to the aim of managers to keep workers permanently on the job. The way to make that aim worthy is to arrange conditions so that factory work is in itself an agreeable career.

For one thing, there must be definite standards of promotion and pay increases. A Detroit factory discovered a workman in its employ who had gone five years on one rate of pay. A Pittsburgh plant until recently was paying three different rates of pay for the same operation under three different names in different departments.

There should be variety of interest, too. The modern subdivision of labour makes a given task a drudgery, monotonous, and intellectually stagnant, but it brings with it the possibility of frequent transfers, so that, with proper instruction, a man can

follow all the steps of a process without great cost to the plant. The Ford Motor Company asks each employee to fill out a card stating the jobs to which he would like to be transferred when it is possible. A company in Rochester encourages employees to fit themselves for more responsible positions and higher earning power by reimbursing for their outlay those who complete courses of study. The subject of industrial education obviously again hinges upon our discussion at this point, but it is too big to deal with here.

No work is a career, of course, unless it is possible through it to provide for old age. Those plants which succeed in establishing permanent working forces have the inescapable responsibility of providing for the future of all workmen. Group insurance and other forms of life insurance are good, but not sufficient. They do nothing for the workman between his retirement and his death, and serve but poorly even to compose his fears for his family after his death, because, as has been demon-

strated by statistical study, nearly every penny of industrial insurance now goes merely to pay funeral expenses.

A pension system helps to bridge the gap between superannuation and death. Any kind of old-age pension is good, but we should lean, surely, toward the kind that appears least to be a charity on the part of the company. The income from an investment to which the workman has contributed and which the company has helped him to accumulate is not charity, and has the further merit of leaving an inheritance to the family. Any profit-sharing scheme like the Procter and Gamble plan, which gives the employee a form of stock ownership, has this merit. The most carefully thought out scheme is that of the Baker Manufacturing Company, of Evansville, Wisconsin, which provides for a fifteen-year pension after retirement on a partial resale to the company of the stock secured out of profits shared.

These are ambitious plans. The programme outlined above is a particular

scheme comprising nearly all of the proposals successfully introduced for the attempted solution of the labour problem. Altogether they may not solve it, for we have taken no account of State action, nor of what workmen may do for themselves by association, but incomplete as they may be, these remedies are sufficiently aspiring and they are all that managers can undertake on their own responsibility.

Even if all of these proposals are applicable to most plants, no factory that has so far failed to inaugurate most of these things can hope immediately to get them all going. It will have to go slowly for two reasons, especially. In the first place, it is impossible to apply any new scheme to all employees at once. This is particularly true if, for the expedient to be successful, it must be understood and believed in by the employees. In such a case it must begin with only those who are ready for it. When the Jeffrey Manufacturing Company, of Columbus, Ohio, began its build-

ing and loan association seven years ago, only eighteen workers out of 500 who at first expressed interest were sufficiently impressed to make an actual beginning. Now, over a thousand belong to the association, and they have over a half-million dollars invested. Most good enterprises with workmen have begun in this small way, and no employer should be discouraged by a meagre start if the principle at stake is important.

But it is even harder to make an industrial programme succeed promptly, owing to the difficulty that a plant has in establishing its character with its workmen. It is so even with individuals. We do not easily believe in the permanence of good intentions. We intensely desire to find friends in whom we can trust and who will be as helpful and patient with us ten years from now as to-day, but experience makes us cautious. Once we are convinced of the unalterable integrity of a friend, there is no gift of adoration too extravagant to lay at his feet.

Workmen have been disappointed too often to be anything but sceptical. They have tested too many mere paper plans for their welfare to place any easy reliance upon new ones. But when a management, by undeviating honesty, determination, and good spirit, carries through during a term of years a programme of employees' betterment, it cannot fail to win their confidence and friendship.

# HOW TO REDUCE LABOUR EXCHANGES

## I. PRELIMINARY MEASURES.

(a) Attempt to learn true cost of exchanging labour in your plant in order to know how much you can afford to spend to eliminate it.

(b) Keep adequate records as means of analysis of sources and causes of exchanges.

(1) Historical and statistical record separate for each employee, including date of employing or transferring, rates, earnings, bonuses, defective work, complaints by or against man, absence, tardiness, periodic certification of foremen, date of quitting and reasons.

(2) Monthly records of exchanges tabulated by numbers leaving each department, for each of several causes, and by numbers in service for each of several periods above one week.

- (3) Record of high and low earnings by departments, compared with exchange records.
- (4) Defective work by departments.
- (5) Absenteeism and tardiness by departments.

## 2. FUNDAMENTAL REMEDIES.

- (a) Hire the right men for the jobs.
- (1) Work up a good application list which is a "prospect file" by vigilant search of sources of supply, by industrial census of your vicinity, by courteous and hospitable treatment of applicants at all times, and by getting a good name for your factory even from men who have left you.
- (2) Using your present work force as a "prospect file," co-operate with agencies for industrial education, supplementing them with apprenticeship training, to build up a system of promotion and transfer.



- (3) Secure time to examine new applicants thoroughly by receiving advance notice of labour requirements and by using adequate assistance in employment department.
- (4) Hire in accordance with written specifications for each job, prepared at leisure, and after due consultation and criticism.
- (5) Prepare a definite scheme of direct examination for each type of work, using as much of character reading methods as your experience approves. (There is as yet no secure scientific method of testing applicants.)
- (6) Examine physically with view to general fitness, to suitability for specified job, and to need of later upbuilding.
- (7) Visit homes of desired applicants.
- (8) Check up records of previous employments.
- (9) Hire only those who can earn an adequate wage.

- (b) Pay an adequate wage.
- (1) Study cost of and facilities for decent living for each workman and use results in setting base rates.
- (2) Give special study to cases of inefficient workmen, to see if money troubles are affecting them.
- (3) Centralize and pay off at discount, debts of overburdened workmen.
- (4) Promote a mutual aid association.
- (5) Establish a legal aid bureau.
- (6) Pay weekly.
- (7) Discourage alcoholism.
- (8) Instruct in proper use of income.
- (9) Encourage thrift and home building.
- (10) Where special causes for increased living cost obtain, attack them, as by co-operative stores, housing measures, etc.

- (c) Provide steady work.
- (1) Give pieceworkers a steady flow of material during the day, by a proper scheduling system.
- (2) Regularize production throughout the year to minimize lay-offs and shut-downs.
- (3) Abolish the annual physical inventory, in favour of a perpetual inventory with continuous checks.
- (4) Make repairs promptly and provide a sufficient reserve supply of tools.
- (d) Do not fire hastily.
- (1) Check up foremen whose departments show high exchange records through men's quitting.
- (2) Do not let foremen discharge at all.
- (3) Give unsatisfactory men at least one chance through transfer.
- (4) Establish an employment committee to review cases of discharge where men appeal.

- (5) Establish foremen's club, to study ways of getting along with men.
  - (6) Interview, before paying off, men who quit voluntarily.
- 

### 3. SUPPLEMENTARY REMEDIES.

- (a) Start new men right.
  - (1) Make a clearly understood agreement as to starting pay and schedule of advances.
  - (2) Introduce new men to foremen, to fellow workers, and to physical surroundings, and acquaint with rules and facilities of plant.
  - (3) Instruct men thoroughly in new task.
  - (4) Advance money or meal tickets to beginners short of funds.
  - (5) Help beginners speedily to get on piece or bonus rates.
- (b) Promote physical efficiency.
  - (1) Establish a physical department.

- (2) Examine all workmen periodically and provide machinery for following up those found to be defective.
- (3) Provide adequate light, heat, and ventilation.
- (4) Reduce noise, dirt, and noxious odours and fumes.
- (5) Purify oils, waste, and other supplies.
- (6) Purify drinking water.
- (7) Provide sanitary lockers, wash-rooms, and toilets.
- (8) Insist upon good teeth and good eyes by using, at least on part time, the services of a dentist and an oculist.
- (9) Get nurses or doctors to visit those kept at home by illness.
- (10) Provide mid-workday meals at plant.
- (11) Provide good tools and fatigue-minimizing equipment.
- (12) Shorten work hours while securing fair output.

- (13) Provide at least three rest periods during the day.
  - (14) Arrange for yearly vacations with pay for all employees. This can be on the basis of an efficiency record or punctuality record.
  - (15) Promote athletics.
- (c) Foster good habits.
- (1) Investigate causes of unexpected absence.
  - (2) Fix strict penalties for tardiness and unexcused absence.
  - (3) Bonus regular attendance.
  - (4) Establish a pay system that encourages and rewards accuracy, high output, and punctuality.
- (d) Give all employees a hearing.
- (1) Hear complaints at all times, no matter how put forward.
  - (2) Hold regular shop meetings by depart-

ments and by divisions to hear men's ideas.

(3) Establish a system for considering written suggestions from men; rewarding with commendation, prizes, or promotion all thought worthy, and acknowledging all such suggestions without exception.

(4) Encourage all forms of self-directed organization, whether of athletic, social, or co-operative enterprises—provided such organization is not subject to orders from persons outside of your plant and contrary to its interests.

(e) Make work in your plant a sufficient career.

(1) Establish system for granting unasked-for pay increases as deserved.

(2) Discover ambitions of men for future transfers and promotions.

(3) Help to train men to new tasks.

- (4) Transfer with some liberality.
- (5) Encourage men to improve general education by reimbursing for outlay on courses of study as completed.
- (f) Provide for future of all workmen.
- (1) Purchase group insurance for all workmen.
- (2) Pension disabled or superannuated employees.
- (3) Share profits on some form of stock-sharing basis, possibly in lieu of pension scheme.

#### 4. PROVOCATIVE REMEDIES.

- (a) Discharge when other methods clearly fail :
  - (1) Those with chronic social diseases.
  - (2) Those whose morals menace the high standards of fellow employees.
  - (3) Those who persist in agitation.
  - (4) Those who will not stop drinking.



(b) Submit all such discharges to appeal committee on which employees are represented.

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